the commissioners themselves, it will be seen that the answers were not found, partly because the data to hand were insufficient and partly because the problem of plague in India is of far greater complexity than we were led to expect, and because there were too many unexpected difficulties encountered by the Commission.

If one reads some of the self-sufficient conclusions of some modern writers on plague (including the above-mentioned reports of the foreign commissions), one is met by the apparent simplicity and seemingly satisfactory solution of the problem concerning the etiology, epidemiology, prophylaxis, treatment, &c., of plague; and yet here we have a commission, consisting of a number of the most able and highly qualified experts, examining, experimenting, criticising and discussing, and at the end of their labours they either fail to give a specific answer to the specific questions asked, or they are able to do so only in a fragmentary manner and under certain restrictions. The commissioners have not been able to trace when, whence and how plague came into Bombay; the commissioners are not able to state the manner in which plague was imported and how it spread in many localities in India; the commissioners are not able either to condemn or to recommend the use for therapeutic purposes of either Lustig's serum or Yersin's serum; and the commissioners express a not markedly decided, although on the whole a favourable, opinion about Haffkine's plague prophylactic. Although definite answers by the Commission to the four specific questions could not be given, many valuable opinions and facts concerning plague in India have been placed on record.

In the first place, the Commission distinguished the mild (or ambulating) form of true bubonic plague from the severe form, the former as "pestis minor," the latter as "pestis major." This is a timely and important statement, because recently some "plague experts" have tried to raise some febrile disease associated with glandular swelling, but which, according to their own showing, is not plague, that is to say, is not caused by the *Bacillus pestis*, to the position of "pestis minor," thereby creating and fostering misunderstanding.

Another important point is the confirmation by the Commission concerning the great importance of "locality" in the dissemination of plague (vol. v. p. 101). "The universal experience of plague in India proves . . . that houses into which the infection of plague has been imported, whether by man or by rats, are infective, this infectivity being so marked that many of the officers who have had most experience of the disease have come to the conclusion that the principal source of infection is . . . to be found in the houses into which the infection of plague has been introduced."

Unfortunately, the Commission did not find sufficient data to explain the nature of this factor. Equally unsatisfactory results attended the discussion as to the importance of rats in the dissemination of plague amongst human beings. But as regards the reality of the danger of clothes and personal effects of plague-infected persons in transmitting plague to new "localities," the Commission is very emphatic.

Not the least valuable part of the report consists in the indication of the nature of further work required for elucidating many of the points at present unsolved. Amongst these is the encouragement of further experimental work in the more accurate study of the blood of animals which furnish curative serum, and the importance of such work in obtaining a uniform strength and accurate standard of Haffkine's plague prophylactic.

E. KLEIN.

A. W. BENNETT.

ALFRED WILLIAM BENNETT, M.A., B.Sc., F.L.S., the well-known lecturer on botany at St. Thomas's Hospital, and for many years a prominent figure in botanical circles, died suddenly from heart disease on January 23. Born at Clapham in 1833, Mr. Bennett took the degree of B.A. (Lond.) in 1854, and afterwards spent ten years in business as a publisher. During this period he employed photography in the illustration of books, and was one of the first, if not the first, to do so. Shortly after taking his M.A. degree he had the misfortune to fall from a horse, an accident that somewhat seriously affected his health throughout his subsequent life. When the publication of NATURE was commenced, Mr. Bennett was appointed as the first sub-editor, and he occupied that postion for several years. He received the appointment of lecturer on botany at St. Thomas's Hospital nearly thirty years ago. Botanical students will remember Mr. Bennett as the translator of the third edition of Sachs's classical "Lehrbuch der Botanik" and of Thomé's Lehrbuch. His enthusiastic study of the flora of the Swiss Alps found expression in some important works for the use of students of Alpine botany. His translation of Dalla-Torre's "Tourist's Guide to the Flora of the Alps" was issued in 1886, and previously he edited Seboth's "Alpine Plants Painted from Nature," a work in four volumes. His useful "Flora of the Alps," in two octavo volumes, accompanied by 120 coloured plates, appeared in 1897. He devoted much attention to the Cryptogams, as witnessed by the excellent "Handbook of Cryptogamic Botany," a work executed in conjunction with Mr. George Murray and published in 1889. With regard to the systematic study of the Phanerogams, Mr. Bennett confined his labours chiefly to the Polygalaceæ, which he monographed for the "Flora of British India" and the "Flora Brasiliensis," dealing with the order also in some important papers contributed to the *Journal of Botany*. In the Royal Society's Catalogue of Scientific Papers he appears as the sole author of forty-six papers, many of which are based on his observations respecting the fertilisation of flowers. Elected a fellow of the Linnean Society in 1868, he served for some years on the council of that society, and was one of the vice-presidents for 1891-92. He was also a fellow of the Royal Microscopical Society, of which he was a vice-president in 1899-1900, and the editor of its *Journal* since 1897.

S. A. S.

NOTES.

AN influential committee has been formed with the object of establishing a memorial tower and meteorological station in honour of Dr. J. P. Joule, F.R.S., at Sale, Cheshire, where he lived from 1872 down to the time of his death in 1889. Sir W. H. Bailey has offered to the Sale District Council an automatic recording meteorological and public clock made from designs which are the result of his investigations and inquiries with regard to similar instruments in this country and abroad. The instrument will be unique in its details; will indicate the time as a public clock on large dials, produce automatic graphic records of the various changes of temperature and the fluctuations of atmospheric pressure, and also changes of the wind and the rainfall of the district. In addition to this gift, which will cost about 250*l*., Mr. F. Armstrong has offered to the Council a set of instruments to equip a meteorological station, and the only condition attached to these gifts is that they shall be suitably housed. Designs for a building to be called "The Joule Memorial Tower," to contain the recording and other instruments, have been prepared, and the Council is willing to permit the erection of such a building in the public park and recreation ground. In a room at the base of the building the meteorological instruments will be placed, and on one side of the exterior a tablet will be fixed on which there will be set a medallion portrait of Dr. Joule and a short record of his titles to fame. The cost of this tower will probably be 1000*l*., which sum the District Council would have been willing to provide had its funds been applicable for such a purpose. As this course was not practicable, a committee has been formed at the instance of the District Council for the purpose of obtaining subscriptions to raise the amount required. Subscriptions should be sent to the hon. treasurer (Mr. A. H. Megson, The Priory, Sale), or the hon. secretary (Mr. J. W. Robson, Selbourne Lodge, Sale).

THE Royal Institution has received the following relics of Michael Faraday, bequeathed to it by the late Mr. Thomas J. F. Deacon, of Newcastle-on-Tyne:—Medals of silver and bronze (numbering twenty in all), and including the Fuller medal of 1828, two Copley medals of 1832 and 1838, two Newton medals of the Royal Society, 1833 and 1838, and the Rumford medal of 1846; and two foreign Orders, contained in a small mahogany box; a book of portraits and autographs, including original letters from the Prince of Wales and Prince Alfred (written in 1856), Louis Napoleon, Emperor of the French; Humphry Davy, Thomas Young, Humboldt, John Dalton, Whewell, Mary Somerville, and many others; a daguerreotype of a consultation of Faraday with Prof. Daniell; a drawing in colours of the laboratory of the Royal Institution, by a niece of Sir John Moore; and a manuscript book entitled "A Class Book for the Reception of Mental Exercises instituted July 1818," containing contributions by Faraday.

THE Council of the Society of Arts is prepared to award, under the terms of the Benjamin Shaw trust, a gold medal or a prize of 20*l*. "for any discovery, invention, or newly-devised method for obviating or materially diminishing any risk to life, limb or health incidental to any industrial occupation, and not previously capable of being so obviated or diminished by any known or practically available means." Intending competitors should send in descriptions of their inventions not later than May 1, 1902, to the secretary of the Society of Arts, Adelphi, London, W.C.

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THE meeting of the British Ornithologists' Club on March 19 is to be specially devoted to an exhibition of photographic slides, illustrating bird-life of all kinds, taken by members of the Club and their friends in various parts of the world. It is expected that a large number of very interesting light-pictures will be shown on this occasion.

FROM the *American Field* we learn that a young female specimen of that rare Arctic mammal, the musk-ox (*Ovibos moschatus*), reached Chicago alive at the beginning of January last. It is said to have been captured by hunters employed for the purpose by Captain H. H. Bodfish, of the steam-whaler *Beluga* (of San Francisco), near Cape Bathurst in the Arctic Ocean. A figure is given of this animal, which is stated to be the only living musk-ox ever brought alive to the United States. The only specimen of the musk-ox in England is that belonging to the Duke of Bedford at Woburn. There are, however, said to be also examples of this animal in the Zoological Gardens of Copenhagen and Berlin.

WE are glad to be able to record the formation of an Acetylene Association, which is similar in character to the associations which have existed for some time in several countries abroad. The object of the Association, as stated in the articles thereof, is "To promote the advancement of acetylene gas engineering and manufacture, and to facilitate the interchange of information amongst the members of the Association." An attempt was made in 1898 to found such an association, largely on the initiation of Sir David Salomons, but the trade did not then show sufficient general interest in the matter to make this possible. In reviewing this attempt a note of bitterness is sounded as to the opposition which every new industry started in this country has to encounter. Perhaps we may hope that the functions of the National Physical Laboratory will be wide enough in scope to make such repinings unnecessary, by giving new industries a helping hand in the future. The chairman of the Association is Mr. F. G. Worth, manager of the Acetylene Illuminating Company, who, as one of the prime movers in the formation of the Association, has devoted much time and care to bringing matters to a successful issue. The members of the council as at present constituted are nearly all members of well-known firms interested in acetylene, but several vacancies have yet to be filled up at the first annual general meeting, to be held on February 27. Subsequent to this, meetings will be arranged at which papers will be read and discussed. The official organ of the Association is, for the present, the *Journal of Acetylene Gas Lighting*, and the present secretary is Mr. Lacey Downes, of 11, Ironmonger Lane, Cheapside.

DURING the past week this country, in common with the greater part of western Europe, has been visited with inclement weather and very keen north-east winds. In Scotland the temperature in the screen has fallen 20° and more below the freezing point, the minimum reading during Friday night being 7° at Nairn. In the south the thermometer has not been much below the freezing point, but the north-east wind has been stronger than in the north, and this has greatly added to the sensation of cold. The barometer has risen above 31 inches in the north of Scotland, the reading at Aberdeen being 31·11 inches at 10 p.m. on Friday, which is as high as the very exceptional reading in our islands in January, 1896. Barometrical gradients have been very steep over the south of England and in France and Germany, which have given rise to fierce north-easterly gales in the Channel and over the southern portion of the North Sea. The gales have been unusually prolonged, continuing without interruption for about three days.

IN one of the important articles contained in vol. xxiii. of *Aus dem Archiv der Deutschen Seewarte*, Dr. Grossmann discusses the results of the maximum and minimum temperatures at Hamburg during the last quarter of a century (1876-1900). During this period the highest readings were 89°·6 in July 1883, and 89°·1 in May 1892. The lowest were −3°·6 in December 1876, and −1°·1 in January 1893. Temperatures of 86°·0 and upwards were recorded seventeen times between May and August, and 3°·0 and below also seventeen times between December and February. If we denote as summer days those on which the highest temperature reached or exceeded 77°, and as wintry days those on which the temperature remained below the freezing point, we find that the latter were twice as frequent as the former. The distribution shows that the so-called wintry days occurred as late as March and as early as November, and that the summer days occurred as early as May and as late as September. April and October were the most temperate months; the highest reading did not exceed 77°, and the lowest did not fall below the freezing point.

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Driest year....	Padua 58	Klagenfurt 42	Mailand 62 per cent.
Wettest ,, ...	,, 152	,, 151	,, 152 ,,

Using the earlier observations of Padua so far back as 1725, the extremes for this station became 56 per cent. and 181 per cent. Taking the frequency of similar yearly totals during the last hundred years, he groups the wet and dry years as shown in the following summary:—

Character	Very dry	Dry	About normal	Wet	Very wet	Extra-ordinarily wet
Per cent...	51-70	71-90	91-110	111-130	131-150	over 150
Number...	8	26	37	22	6	1

These figures show that the dry years predominate, 34 per cent. being dry and 29 per cent. wet, but the wet years exceed to a greater extent the mean yearly value of rainfall than the dry years. Herr Hann then determines the mean epochs of these wet and dry periods and finds that they satisfy a thirty-five-year period, with their maxima (wet) and minima (dry) in the following years:—

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MR. S. HARBERT HAMILTON has started on a scientific exploring and collecting trip of several months' duration in the vicinity of Santiago, Cuba. Collections will be made in all branches of natural history, the bulk of which will go to the New York Botanical Gardens, the American Museum of Natural History and the Academy of Natural Sciences of Philadelphia. Specialists or institutions desiring material in any branches direct from the locality are invited to correspond with Mr. Hamilton at Santiago, Cuba.

THE meeting of the British Ornithologists' Club on March 19 is to be specially devoted to an exhibition of photographic slides, illustrating bird-life of all kinds, taken by members of the Club and their friends in various parts of the world. It is expected that a large number of very interesting light-pictures will be shown on this occasion.

FROM the *American Field* we learn that a young female specimen of that rare Arctic mammal, the musk-ox (*Ovibos moschatus*), reached Chicago alive at the beginning of January last. It is said to have been captured by hunters employed for the purpose by Captain H. H. Bodfish, of the steam-whaler *Beluga* (of San Francisco), near Cape Bathurst in the Arctic Ocean. A figure is given of this animal, which is stated to be the only living musk-ox ever brought alive to the United States. The only specimen of the musk-ox in England is that belonging to the Duke of Bedford at Woburn. There are, however, said to be also examples of this animal in the Zoological Gardens of Copenhagen and Berlin.